

Application No. 10/671682
Amendment dated 6 September 2005
Reply to Office Action of 3 June 2005

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Amendments to the Specification

Please replace the first full paragraph on page 23 with the following rewritten paragraph.

Figures 5-A, 5-B and 5-C depict a mask application apparatus 65 according to an alternative embodiment of the invention, where edges 53 of photopolymer plate 44 are non-bevelled (i.e. substantially orthogonal to the imageable surface of plate 44). In mask application apparatus 65, spray head 46 comprises one or more variable spray nozzle(s) 70. Variable nozzle(s) 70 are configurable to provide different spray patterns ~~72, 74~~ 172, 174. As shown in Figure 5-B, nozzle 70 may be adjusted to provide a widely diverging spray pattern ~~72~~ 172 having a divergence angle θ_1 . The wide divergence angle θ_1 of spray pattern ~~72~~ 172 makes this configuration of variable nozzle(s) 70 suitable for spraying an edge masking material onto the non-bevelled edges 53 of plate 44. As shown in Figure 5-C, nozzle 70 may be adjusted to provide a relatively narrowly diverging spray pattern ~~74~~ 174 having a divergence angle θ_2 . The narrow divergence angle θ_2 of spray pattern ~~74~~ 174 makes this configuration suitable for spraying a surface mask onto plate 44 (Figure 5-C) and for spraying an edge masking layer on a bevelled edge (not shown). However, as shown in dashed lines in Figure 5-C, the narrow divergence angle θ_2 of spray pattern ~~74~~ 174 makes this configuration unsuitable for applying an edge masking material to non-bevelled edge 53. Mask application apparatus 65 of Figure 5-A otherwise comprises components and functionality that is substantially similar to that of mask application apparatus 35 shown in Figure 2-A and described above.

Please replace the paragraph spanning pages 23 and 24 with the following rewritten paragraph.

In further alternative embodiments, a spray head may comprise one or more nozzle(s) particularly configured for applying edge masking material to the plate edges. Such spray heads may be separate spray heads comprising only edge spraying nozzle(s) or such spray heads may comprise one or more principal nozzle(s) for spraying a surface mask layer on a printing plate and/or one or more auxiliary edge spraying nozzle(s). In one example, a spray head may comprise one or more edge spraying nozzle(s) which spray a widely diverging spray pattern (similar to widely diverging spray pattern ~~72~~ 172 of Figure 5-B) capable of coating a non-bevelled edge. In another example depicted schematically in Figure 5-D, a

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spray head may comprise one or more edge spraying nozzle(s) 70 oriented such that the central axis ~~74A~~ 274A of their spray pattern(s) ~~74~~ 274 is directed towards the printing plate at a non-orthogonal angle. Such angularly oriented edge spraying nozzle(s) may apply edge masking material to a non-bevelled edge. Preferably, such angularly oriented edge spraying nozzle(s) are oriented such that the central axis ~~74A~~ 274A of their spray patterns forms an angle in a range between 20°-80° with respect to the imageable surface of the printing plate. A spray head may comprise a plurality of edge spraying nozzles having a plurality of non-orthogonal orientations, such that they may apply edge masking material to plate edges having a number of different orientations. A spray head may also comprise one or more edge spraying nozzle(s) having adjustable orientations, such that the edge spraying nozzle(s) may be oriented at a plurality of desired angles with respect to the various plate edges for applying edge masking material to plate edges having a number of different orientations. These alternative embodiments may also be used to spray edge masking material onto bevelled printing plate edges.

Please replace the paragraph spanning pages 24 and 25 with the following rewritten paragraph.

Figure 3 shows a combined mask application/plate patterning apparatus 110 in accordance with one embodiment of the invention. Apparatus 110 includes a drum 112 which is mounted for rotation about an axis 114 as indicated by arrow 116. A printing plate 118 is mounted on the cylindrical surface 112A of drum 112. Printing plate 118 comprises a base layer ~~118A~~ 118A and a photopolymer layer 118B. In the illustrated embodiment, printing plate 118 is a seamless CPPS plate, wherein base layer 118A fits snugly onto the cylindrical surface 112A of drum 112. Drum 112 may also accommodate one or more sections of printing plate mounted on a sleeve in a plate-on-sleeve process. Head 120 is mounted on tracks 122 for movement in a direction parallel to axis 114 as indicated by arrow 124. Axial movement of head 120 is actuated by rotation of lead screw 123. Other linear actuation devices may be used to provide axial movement of head 120.

Please replace the first full paragraph on page 27 with the following rewritten paragraph.

In the illustrated embodiment, head 120 also comprises a UV illumination unit 136. UV illumination unit 136 comprises at least one UV source ~~137~~ (not shown) for

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exposing photopolymer layer 118B to actinic radiation through the mask formed by the patterned regions 142, 144 of surface mask layer 140. In the illustrated embodiment, combined mask application/plate patterning apparatus 110 also comprises an optional blanket cleaner 146 which may be used to remove surface mask layer 140 and the edge masking layer after UV exposure. In some embodiments, combined mask application/plate patterning apparatus 110 may not include UV illumination unit 136. In such embodiments, photopolymer layer 118B may be exposed to actinic radiation in a separate apparatus.